

Detailed Data Tables: Women at Risk

Recent changes to the presentation of Massachusetts HIV/AIDS surveillance data

Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Diseases, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2013, this resulted in the removal of 3,529 HIV/AIDS cases, of which 914 have died and 2,615 were living. These persons living with HIV/AIDS may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV/AIDS, irrespective of location at diagnosis, is the basis for MDPH service planning. This change is partially a result of increased activities required by the Centers for Disease Control and Prevention (CDC) for de-duplication among states in an effort to identify cases that are counted multiple times in the National HIV/AIDS Surveillance System. The cases are assigned to the state that reports the earliest date of AIDS diagnosis if available. If the case has not progressed to AIDS, the case is assigned to the state with the earliest HIV diagnosis date. Please note that previous HIV/AIDS fact sheets, data reports and presentations included cases that may have been first diagnosed in another state.

Also effective January 1, 2011, the MDPH HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual exposure mode category for males; those cases have been reassigned to the no identified risk (NIR) exposure mode category. The presumed heterosexual exposure mode category was used with the intention of identifying HIV exposure mode for females when sex with males is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. Twenty-nine percent of females living with HIV/AIDS and 40% of recent female HIV diagnoses are reported in the presumed heterosexual exposure mode category. The application of the presumed heterosexual exposure mode category to males is overly inclusive in that female to male HIV transmission is biologically less probable, and there are alternate exposure modes that are possible for males, including sex with other men (MSM) or IDU. The CDC reports males diagnosed with HIV/AIDS who report sex with females as their only risk factor, without corresponding partner risk or HIV status information, in the NIR exposure mode category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for males in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual exposure mode categories for females.

Table 1. People diagnosed with HIV infection by gender: Massachusetts¹, 2009–2011²

Gender:	N	%
Male	1,447	73%
Female	532	27%
Total	1,979	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Table 2. People living with HIV/AIDS on December 31, 2012 by gender: Massachusetts¹

	HIV/AIDS	
Gender:	N	%
Male	13,144	71%
Female	5,315	29%
Total	18,459	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Table 3. People diagnosed with HIV infection by Health Service Region (HSR)¹ and gender: Massachusetts², 2009–2011³

Health Service Region:	Male		Female		Total
	N	%	N	%	N
Boston HSR	457	76%	147	24%	604
Central HSR	110	64%	61	36%	171
Metro West HSR	250	77%	75	23%	325
Northeast HSR	225	69%	101	31%	326
Southeast HSR	197	71%	81	29%	278
Western HSR	147	72%	58	28%	205
Prisons ⁴	61	88%	8	12%	69
Mass. Total	1,447	73%	532	27%	1,979

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999

⁴ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status. Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 4. People living with HIV/AIDS on December 31, 2012 by Health Service Region (HSR)¹ and gender: Massachusetts²

Health Service Region	Male		Female		Total
	N	%	N	%	N
Boston HSR	4,453	76%	1,375	24%	5,828
Central HSR	983	62%	615	38%	1,598
Metro West HSR	1,886	72%	742	28%	2,628
Northeast HSR	1,915	66%	977	34%	2,892
Southeast HSR	1,779	71%	741	29%	2,520
Western HSR	1,291	64%	741	36%	2,032
Prison ³	835	87%	121	13%	956
Massachusetts Total⁴	13,144	71%	5,315	29%	18,459

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status.

⁴ Mass. total includes five persons living with HIV/AIDS with unknown residence at time of report.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 5. Ten cities/towns¹ in Massachusetts² with the highest proportion of women among HIV infection diagnoses (HIV Dx): 2009–2011³

Rank	City/Town	Number of HIV Dx among women	Percent of Total HIV Dx
1	Brockton	34	55%
2	Lawrence	25	46%
3	Malden	11	44%
4	Lowell	22	42%
5	Framingham	9	38%
6	Worcester	31	36%
7	Holyoke	11	34%
8	Springfield	31	32%
9	Waltham	11	31%
10	Chelsea	7	30%

¹ Among cities/towns with over 20 reported HIV infection diagnoses in the years 2009–2011. Note: reflects the city/town of a person's residence at the time of report (not necessarily current residence). People diagnosed while at a correctional facility are not included.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999. Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Table 6. People diagnosed with HIV infection by gender and race/ethnicity: Massachusetts¹, 2009–2011²

Race/Ethnicity:	Male		Female	
	N	%	N	%
White, non-Hispanic	647	45%	105	20%
Black, non-Hispanic	386	27%	279	52%
Hispanic/Latino	357	25%	131	25%
Asian/Pacific Islander	50	3%	12	2%
Other/Unknown	7	<1%	5	1%
Total	1,447	100%	532	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Table 7. People living with HIV/AIDS on December 31, 2012 by gender and race/ethnicity: Massachusetts¹

Race/Ethnicity:	Male		Female	
	N	%	N	%
White, non-Hispanic	6,667	51%	1,361	26%
Black, non-Hispanic	3,125	24%	2,391	45%
Hispanic/Latino	3,049	23%	1,457	27%
Asian/Pacific Islander	240	2%	69	1%
Other/Unknown	63	<1%	37	1%
Total	13,144	100%	5,315	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Who is experiencing differential impact from HIV/AIDS?

Explanation of age adjusted rates

A “rate” of a disease per 100,000 population is a useful way to compare groups that have substantially different population sizes rather than relying on the raw number of cases. For example, the number of people living with HIV/AIDS on December 31, 2012 who are Hispanic/Latino, is 4,506 whereas the number of people living with HIV/AIDS who are white (non-Hispanic) is 8,028. Although the *number* of people living with HIV/AIDS who are Hispanic/Latino in Massachusetts is smaller than the number of people living with HIV/AIDS who are white (non-Hispanic), we also need to consider that there are far fewer people of Hispanic/Latino heritage living in Massachusetts than white (non-Hispanic) individuals. Hispanic/Latino individuals represent 10% of the Massachusetts population compared to white (non-Hispanic) individuals who represent 78% of the population¹. If HIV/AIDS had the same impact on the Hispanic/Latino population of the state as on the white (non-Hispanic), then there should be eight times as many cases in white (non-Hispanic) individuals, but there are less than twice as many. By calculating a rate which takes into consideration the differences in the population size, it is evident that the number of people living with HIV/AIDS for every 100,000 Hispanic/Latino individuals in Massachusetts is much higher than the rate for every 100,000 white (non-Hispanic) individuals. This is called a “crude rate” and is calculated by dividing the number of people living with HIV/AIDS by the population of interest (the total number of Hispanic/Latino individuals in Massachusetts, for example) and multiplying by 100,000. (See example 1.A below).

¹ The denominators for prevalence calculations are based on year 2010 population estimates from the MDPH Bureau of Health Information, Statistics, Research and Evaluation

Example 1.A: Calculation of crude HIV/AIDS prevalence rate for white (non-Hispanic) individuals, Massachusetts (156.4 per 100,000)

$$\begin{aligned}
 \text{Crude HIV/AIDS prevalence rate for white (non-Hispanic) individuals} &= (\text{number of white (non-Hispanic) individuals living with HIV/AIDS} \div \text{population size of white (non-Hispanic) individuals}) \times 100,000 \\
 &= (8,028 / 5,132,633) \times 100,000 \\
 &= (.00015641) \times 100,000 \\
 &= \mathbf{156.4}
 \end{aligned}$$

However, sometimes, in addition to the population size being different, the age composition of the populations is different. In Massachusetts, black (non-Hispanic) and Hispanic/Latino populations are generally younger than white (non-Hispanic). The median age of black (non-Hispanic) people (29.7 years) and Hispanic/Latino people (24.5 years) is younger than that of white (non-Hispanic) people (38.8 years). Therefore, it is necessary to “age-adjust” the HIV/AIDS prevalence rate to get a true comparison of the impact of the disease across racial/ethnic groups without an effect from the differences in age composition. Age-adjustment of rates minimizes the distortion created by differences in age composition.

Age-adjusted rates are calculated by weighting the age-specific rates for a given population by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. (See example 1.B below).

Example 1.B: Calculation of age-adjusted HIV/AIDS prevalence rate for white (non-Hispanic) individuals, Massachusetts (134.7 per 100,000)

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
<i>Age group (in years)</i>	<i># of prevalent HIV/AIDS cases</i>	<i>Population (2010)</i>	<i>2000 US standard population weight</i>	<i>Age-adjusted rate ((B÷C×D)×100,000))</i>
<1	0	48,010	0.013818	0.00
1-4	0	200,452	0.055317	0.00
5-14	4	571,967	0.145565	0.10
15-24	94	677,899	0.138646	1.92
25-34	479	603,245	0.135573	10.77
35-44	1232	676,064	0.162613	29.63
45-54	3469	841,315	0.134834	55.60
55-64	2139	697,852	0.087247	26.74
65-74	523	403,518	0.066037	8.56
75-84	84	275,380	0.044842	1.37
85+ years	4	136,931	0.015508	0.05
Total	8,028	5,132,633	1.000000	134.7

To see the effect of age-distribution on prevalence rates see Tables 8 and 9 below for a comparison of crude and age-adjusted rates by race/ethnicity.

Table 8. Crude and age-adjusted rates of diagnosis of HIV infection per 100,000 population¹ by race/ethnicity and gender: Average annual rate 2009–2011², Massachusetts³

State total:	Crude rate per 100,000	Age-adjusted rate per 100,000
White (non-Hispanic)	4.9	5.0
Black (non-Hispanic)	53.4	52.7
Hispanic/Latino	25.9	27.4
Asian/Pacific Islander	5.7	5.2
Total rate	10.1	10.2
Males:	Crude rate per 100,000	Age-adjusted rate per 100,000
White (non-Hispanic) Males	8.7	8.8
Black (non-Hispanic) Males	64.1	62.6
Hispanic/Latino Males	38.6	41.0
Asian/Pacific Islander Males	9.7	8.8
Total rate among males	15.2	15.2
Females:	Crude rate per 100,000	Age-adjusted rate per 100,000
White (non-Hispanic) Females	1.3	1.4
Black (non-Hispanic) Females	43.3	43.2
Hispanic/Latina Females	13.7	14.6
Asian/Pacific Islander Females	2.1	1.9
Total rate among females	5.2	5.4

¹ The denominators for rate calculations are from the MDPH Massachusetts Race Allocated Census 2010 Estimates (MRACE 2010), Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/13

Table 9. Crude and age-adjusted HIV/AIDS prevalence per 100,000 population¹ on December 31, 2012 by race/ethnicity and gender: Massachusetts²

	Crude rate per 100,000	Age-adjusted rate per 100,000
State Total:		
White, non-Hispanic	156.4	134.7
Black, non-Hispanic	1,327.9	1,354.3
Hispanic/Latino	717.9	914.3
Asian/Pacific Islander	85.9	88.0
Total prevalence	281.9	258.5
Males:		
White, non-Hispanic	268.9	229.4
Black, non-Hispanic	1,557.5	1,623.4
Hispanic/Latino	989.6	1,327.5
Asian/Pacific Islander	139.5	143.8
Total prevalence among males	415.1	376.9
Females:		
White, non-Hispanic	51.3	45.8
Black, non-Hispanic	1,113.4	1,124.2
Hispanic/Latina	455.9	557.1
Asian/Pacific Islander	36.8	37.1
Total prevalence among females	157.2	148.2

¹ The denominators for rate calculations are from the MDPH Massachusetts Race Allocated Census 2010 Estimates (MRACE 2010), Massachusetts Department of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/13

Table 10. People diagnosed with HIV infection within the years 2009–2011¹ by gender and place of birth: Massachusetts²

Race/Ethnicity:	Male		Female	
	N	%	N	%
United States (US)	989	68%	227	43%
Puerto Rico/US Dependency ³	92	6%	39	7%
Non-US	366	25%	266	50%
Total	1,447	100%	532	100%

¹ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Ninety-eight percent of people diagnosed with HIV infection from 2009–2011 who were born in a US dependency were born in Puerto Rico, 1% were born in the US Virgin Islands, 1% were born in Guam and 1% were born in an unknown dependency.

Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/13

Table 11. People living with HIV/AIDS on December 31, 2012 by gender and place of birth: Massachusetts¹

Place of Birth:	Male		Female	
	N	%	N	%
United States (US)	9,306	71%	2,859	54%
Puerto Rico/US Dependency ²	1,274	10%	655	12%
Non-US	2,564	20%	1,801	34%
Total	13,144	100%	5,315	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Ninety-eight percent of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam and 2% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 12. Females diagnosed with HIV infection by place of birth and year of diagnosis: Massachusetts¹ 2002–2011²

	US		Puerto Rico/ US Dependency ³		Non-US		Total
	N	%	N	%	N	%	
2002	155	46%	35	10%	147	44%	337
2003	131	43%	42	14%	131	43%	304
2004	108	41%	35	13%	123	46%	266
2005	104	44%	24	10%	107	46%	235
2006	106	48%	17	8%	98	44%	221
2007	102	49%	18	9%	87	42%	207
2008	76	39%	26	13%	91	47%	193
2009	70	43%	17	10%	77	47%	164
2010	74	40%	10	5%	100	54%	184
2011	83	45%	12	7%	89	48%	184

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available 10 year period after the implementation of HIV infection reporting in 1999.

³ Ninety-eight percent of all people diagnosed with HIV infection in MA who were born in a US dependency were born in Puerto Rico, 1% were born in the US Virgin Islands, <1% were born in American Samoa, <1% were born in Guam and 1% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 13. People diagnosed with HIV infection by gender and exposure mode: Massachusetts¹, 2009–2011²

Exposure Mode:	Male		Female	
	N	%	N	%
Male-to-male sex (MSM)	808	56%	N/A	N/A
Injection drug use (IDU)	106	7%	56	11%
MSM/IDU	53	4%	N/A	N/A
Heterosexual sex	73	5%	176	33%
Other	6	<1%	8	2%
Total undetermined/other	401	28%	292	55%
• Presumed Heterosexual Sex ³	N/A	N/A	215	40%
• Undetermined ⁴	401	28%	77	14%
Total	1,447	100%	532	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁴ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A = Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Note: The category of “presumed heterosexual” is used in Massachusetts to re-assign females who are reported with an exposure of heterosexual sex, but only with a partner of unknown HIV status or behavioral risk. Massachusetts uses the category of presumed heterosexual to distinguish these female cases from other undetermined cases about which we know less. Prior to January 1, 2011, the presumed heterosexual category was also used to report HIV data in males. The rationale for the application of the presumed heterosexual exposure mode category to females only has been addressed in the MDPH OHA report “Intersecting Risks: HIV Infection among Heterosexual Women and Men in Massachusetts.” (2010)

http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting_risks.pdf. Nationally, the Centers for Disease Control and Prevention categorize “presumed heterosexual” cases as “no identified risk” (NIR). As such, comparisons of the presumed heterosexual category cannot be made to national data. Caution should be used in interpreting data for presumed heterosexual, as it is still not clear what the exposure risk was for females in this category. Although a person may not report other risk behaviors, such as injection drug use to a health care provider, it does not exclude the possibility that an individual has experienced these other risks. There are many barriers to disclosing HIV risk behaviors in the health care setting such as a limited patient-provider relationship or stigma.

Table 14. People living with HIV/AIDS on December 31, 2012 by gender and exposure mode: Massachusetts¹

Exposure Mode:	Male		Female	
	N	%	N	%
Male-to-male sex (MSM)	6,720	51%	N/A	N/A
Injection drug use (IDU)	2,479	19%	1,274	24%
MSM/IDU	627	5%	N/A	N/A
Heterosexual sex	782	6%	1,865	35%
Other	223	2%	186	3%
Total undetermined/other	2,313	18%	1,990	37%
• Presumed heterosexual sex ²	N/A	N/A	1,600	30%
• Undetermined ³	2,313	18%	390	7%
Total	13,144	100%	5,315	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes female sex with male of unknown HIV status or risk. This category is limited to females.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A=Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 15. Females diagnosed with HIV infection by race/ethnicity¹ and exposure mode: Massachusetts², 2009–2011³

Exposure Mode:	White (NH)		Black (NH)		Hispanic/Latina	
	N	%	N	%	N	%
Injection drug use	37	35%	5	2%	14	11%
Heterosexual sex	26	25%	91	33%	56	43%
Total undetermined/other	42	40%	178	64%	59	45%
• Presumed heterosexual sex ⁴	24	23%	138	49%	44	34%
• Undetermined ⁵	18	17%	40	14%	15	11%
Total⁶	105	100%	279	100%	131	100%

¹ Data for Asian/Pacific Islander, American Indian/Alaska Native and Other/Unknown race/ethnicity are not presented due to small numbers.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

⁴ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁵ Includes those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁶ Totals include pediatric and blood/blood products exposure modes.

(NH) = Non-Hispanic

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 16. Females living with HIV/AIDS on December 31, 2012 by race/ethnicity¹ and exposure mode: Massachusetts²

Exposure Mode:	White (NH)		Black (NH)		Hispanic/ Latina		API	
	N	%	N	%	N	%	N	%
Injection drug use	601	44%	287	12%	374	26%	-- ⁵	-- ⁵
Heterosexual sex	409	30%	792	33%	628	43%	22	32%
Other	48	4%	79	3%	54	4%	-- ⁵	-- ⁵
Total undetermined/other	303	22%	1,233	52%	401	28%	40	58%
• Pres. HTSX ³	226	17%	1,027	43%	314	22%	24	35%
• Undetermined ⁴	77	6%	206	9%	87	6%	16	23%
Total	1,361	100%	2,391	100%	1,457	100%	69	100%

¹ Data for American Indian/Alaska Native and Other/Unknown race/ethnicity are not presented due to small numbers.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁴ Includes those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up, and those with confirmed occupational exposure.

⁵ Values less than five are suppressed for populations less than 50,000 or for populations of unknown size. Additional values may be suppressed to prevent back calculation.

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/13

Table 17. People diagnosed with HIV infection by gender and age at HIV diagnosis: Massachusetts¹, 2009–2011²

Age (years):	Males		Females	
	N	%	N	%
Under 13	5	<1%	7	1%
13 to 19	33	2%	19	4%
20 to 24	143	10%	33	6%
25 to 29	162	11%	45	8%
30 to 34	173	12%	77	14%
35 to 39	194	13%	83	16%
40 to 44	226	16%	77	14%
45 to 49	234	16%	67	13%
50 to 54	137	9%	49	9%
55 to 59	68	5%	41	8%
60+	72	5%	34	6%
Total	1,447	100%	532	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Technical Notes:

Tables 18 includes data reported by Massachusetts residents through anonymous telephone interviews from 2009 to 2010. This ongoing random-digit-dial telephone survey, the Behavioral Risk Factor Surveillance System (BRFSS), covers a broad range of topic areas (including risk related to sexual activity) and is part of a CDC-funded national survey program.

Table 18. Number of sexual partners in the past year¹, female BRFSS respondents ages 18–64 Massachusetts, 2009–2010				
	0 Partners	1 Partner	2+ Partners	N²
Total Females	18.4%	78.2%	3.4%	3,757
Age in Years:	0 Partners	1 Partner	2+ Partners	N
18–24	29.0%	58.3%	12.7%	133
25–34	9.5%	86.0%	4.5%	477
35–44	7.6%	90.3%	2.1%	852
45–64	26.8%	72.1%	1.2%	2,246
Race/Ethnicity³:	0 Partners	1 Partner	2+ Partners	N
White, non-Hispanic	17.1%	79.4%	3.5%	2,925
Black, non-Hispanic	23.0%	72.3%	4.7%	233
Hispanic	27.0%	69.8%	3.2%	439
Sex of Partner⁴:	0 Partners	1 Partner	2+ Partners	N
Same sex	Not Applicable	94.8%	5.2%	76
Opposite sex	Not Applicable	96.2%	3.8%	2,576
¹ "Number of sexual partners in past year" is a state-added question administered to a sub-sample of BRFSS respondents and represents the number of people a respondent reports having sex with. Sex was defined by the interviewer as including oral, vaginal, or anal sex. ² Only respondents with known values are included in this table. Column sub-totals may not equal overall total due to missing values. ³ Data for Asian respondents is not presented due to small numbers. ⁴ Only asked of adults reporting sex (including oral, vaginal, or anal sex) in the past year Data source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2009–2010				

Technical Notes:

Tables 19–21 include data reported by students in randomly selected Massachusetts public high schools every odd year from 1993 to 2011. This anonymous survey, the Youth Risk Behavior Survey (YRBS), is administered by the Massachusetts Department of Elementary and Secondary Education in collaboration with the Centers for Disease Control and Prevention and focuses on risk behaviors that may affect the health and/or safety of high school students.

Table 19. Sexual behavior as reported among female respondents to the Youth Risk Behavior Survey: Massachusetts, 2011

By Behavior:	Percent of total responding yes to specified question	N ¹ (total number of respondents for each question)
Ever had sexual intercourse	39.4%	1,281
Sexual intercourse before age 13	2.1%	1,281
4 or more lifetime sexual intercourse partners	9.5%	1,284
Sexual intercourse in last 3 months	30.3%	1,284
Condom used at last intercourse ²	51.0%	387
Alcohol/drugs used at last intercourse ²	16.7%	388
Ever been, gotten someone pregnant	4.8%	1,340
Ever had sexual contact against their will	13.5%	1,333
¹ The number of respondents for each question varies because some survey participants do not provide an answer		
² Among females reporting sexual intercourse in the past three months		
Data Source: Massachusetts Department of Elementary and Secondary Education		

Table 20. Massachusetts Youth Risk Behavior Survey respondents reporting condom use at last sexual intercourse by year and gender: Massachusetts, 1993–2011¹

Year	Males		Females		Total	
	%	Total N ²	%	Total N ²	%	Total N ²
1993	57.4%	409	46.7%	462	51.8%	872
1995	59.9%	623	52.0%	626	55.9%	1,253
1997	64.2%	517	50.4%	559	57.0%	1,079
1999	62.6%	589	52.0%	639	57.2%	1,237
2001	61.6%	553	54.9%	582	58.1%	1,139
2003	60.3%	424	57.4%	496	57.4%	922
2005	71.6%	442	59.2%	542	65.0%	986
2007	63.2%	422	59.2%	505	61.1%	929
2009	65.7%	409	50.6%	437	57.5%	849
2011	64.5%	373	51.0%	387	57.7%	761

¹ A random sample of high schools is selected for participation each year; data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education

Table 21. Massachusetts Youth Risk Behavior Survey respondents reporting sexual intercourse (ever) by year and gender: Massachusetts, 1993–2011¹

Year	Males		Females		Total	
	%	Total N ²	%	Total N ²	%	Total N ²
1993	51.4%	1,326	46.0%	1,435	48.7%	2,763
1995	50.3%	1,870	42.8%	1,930	46.5%	3,806
1997	46.8%	1,800	42.4%	1,858	44.7%	3,664
1999	46.4%	1,922	41.8%	2,017	44.1%	3,954
2001	46.3%	1,886	42.3%	1,892	44.3%	3,786
2003	40.8%	1,581	41.1%	1,676	41.0%	3,261
2005	47.9%	1,512	42.9%	1,669	45.4%	3,185
2007	45.2%	1,344	43.7%	1,495	44.4%	2,844
2009	48.0%	1,225	44.6%	1,251	46.4%	2,480
2011	44.7%	1,228	39.4%	1,281	42.0%	2,513

¹ A random sample of high schools is selected for participation each year; data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education

Table 22. Total reported AIDS cases by gender and year of diagnosis: Massachusetts¹, selected years, 1985–2011

Year of diagnosis:	Male		Female		Total
	N	%	N	%	
1985	202	90%	23	10%	225
1990	860	82%	192	18%	1,052
1995	1002	76%	324	24%	1,326
2000	537	70%	227	30%	764
2002	473	69%	213	31%	686
2003	400	66%	202	34%	602
2004	478	69%	213	31%	691
2005	484	71%	194	29%	678
2006	452	70%	192	30%	644
2007	369	68%	177	32%	546
2008	311	71%	128	29%	439
2009	308	69%	137	31%	445
2010	271	68%	126	32%	397
2011	263	69%	119	31%	382

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/13

Table 23. Deaths among persons reported with HIV/AIDS by gender and year of death: Massachusetts¹, 2002–2011

Year of death	Male		Female		Total
	N	%	N	%	N
2002	261	71%	107	29%	368
2003	255	66%	133	34%	388
2004	251	73%	92	27%	343
2005	224	70%	97	30%	321
2006	227	72%	89	28%	316
2007	201	70%	85	30%	286
2008	205	73%	77	27%	282
2009	192	68%	92	32%	284
2010	179	70%	76	30%	255
2011	150	72%	58	28%	208

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/13